

X-33 Phase II Cooperative Agreement

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Context/Acquisition Environment

- **Background**
 - Access to Space Study
 - National Space Transportation Policy
 - National Performance Review
 - Expand the use of Cooperative Research Announcements
- **Competition/Schedule**
 - Phase I had multiple cooperative agreement awards for concept definition and technology demonstration
 - Phase II was full and open competition
 - Final rule on Coop. Agreements with Commercial Firms March 27, 1996
 - CAN 8-3 issued April 1, 1996
 - Proposals received May 13, 1996
 - Award to Lockheed Martin Skunk Works team July 2, 1996

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Purpose

- **Cooperative Agreement**
 - financial assistance instruments used to stimulate or support activities for authorized purposes and in which the Government participates substantially in the performance of the effort
- **Cooperative Agreements are ordinarily entered into with commercial firms to:**
 - support research and development,
 - provide technology transfer from the Government to the recipient
 - develop a capability among U.S. firms to potentially enhance U.S. competitiveness

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Purpose

- **X-33 Phase II Cooperative Agreement**
 - Shared resource project that will lead to the design and development of a technology demonstrator, designated the X-33
 - Further advance the technology developments and research performed under X-33 Phase I
 - Initiate final design/construction/flight and ground test of the X-33
 - Demonstrate the key design and operational aspects of a Single Stage to Orbit (SSTO) RLV rocket system
 - Support Government and private sector decisions by the end of the decade to commercialize the operational next-generation reusable launch system

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Cooperative Agreement Structure/Details at Award

- **Responsibilities/SOW**
 - established what each party (Government and Recipient) has agreed to do
- **Resource Sharing**
 - Government contribution (\$912M)
 - Milestone Payments to recipient (cash),
 - Government Task Agreements (non-cash), approximately 300 TA's
 - Recipient contribution (\$212M)
 - Independent Research and Development funds (cash)
- **Schedule**
 - First flight of X-33 by March 31, 1999

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Issues and Lessons Learned

- **Increases in Cost and Schedule**
 - **Changes in Responsibilities/Scope**
- **Milestone Payments and Withholding**
- **Property**
- **Small Business/Socioeconomic**
- **Termination**
- **External Reviews**

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Increases in Cost and Schedule/Scope Changes

- **Policy**
 - Cost growth or in-scope changes shall not increase the amount of NASA's contribution.
 - Additional costs which arise during the performance of the cooperative agreement are the responsibility of the Recipient
- **Issues/Lessons Learned**
 - Technical Issues/Stretchout have increased the program Estimate at Completion
 - Evolving technical approach/design for X-33 and RLV affect responsibilities and milestones
- **Modifications to the Cooperative Agreement**
 - could not increase the Government's fixed contribution
 - reflected added/deleted scope which had to be reviewed in terms of cost and meeting objectives of the cooperative agreement
 - Recipient contribution has increased (by from \$212M to \$356M)

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Milestone Payments and Withholding

- **Policy**
 - Performance-based payment criteria
 - Paid in sequence
 - No partial payments
- **Issues/Lessons Learned**
 - **Milestone Payments**
 - revised milestones now more hardware/software and test oriented criteria
 - parties review upcoming milestones and criteria to avoid surprises
 - hard to establish final milestone sequence at outset of R&D program
 - **Deferred Payment**
 - Lockheed is performing some milestones at an increased cost share one GFY (at risk) with payment out of NASA share in subsequent GFY
 - IG has raised antideficiency and bona fide need rule issues
 - NASA study in response and led by Code G near completion
 - **Withholding**
 - Special provision to enable NASA to withhold payment for failure to comply with cooperative agreement requirement not directly tied to a payment milestone

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Property

- **Policy**

- Inventory report submitted annually
- Title to property is based on use of Government vs. Recipient funds
 - or property is non-cash contribution by Recipient
- Administration normally retained by awarding activity

- **Issues/Lessons Learned**

- **Reporting**

- Code B and Center counterparts want 1018's submitted, companies not set up to do inventory reports (draft change to Part D would address)

- **Title to X-33 is unclear**

- Recipient and Government funds commingled (joint ownership)
- If Government retains title we will be criticized for acquiring a vehicle under a cooperative agreement
- If Recipient retains title we will be criticized for not protecting the taxpayer's interest
- Pursuing collateral agreement where Recipient obtains title upon completion and Government gets preferred customer rights (including use and data rights)

- **Property Administration now delegated, impractical to do otherwise**

- requires education of DCMC/DLA on cooperative agreement T's and C's

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Small Business/Socioeconomic Issues

- **Policy**

- Recipient shall utilize small business concerns, small disadvantaged business concerns, Historically Black Colleges and Universities, minority education institutions, and women-owned small businesses to the maximum extent practicable
 - No small business subcontracting plan and goals
 - No reporting requirements

- **Issues/Lessons Learned**

- **Code K strongly desired data on small and small disadvantaged subcontracting**
 - Recipient voluntarily provided projected subcontracting plans in the various categories (requested based on “maximum extent practicable” language)
 - Planned SB/SDB amounts were inadequate
- **MBRAC committee visits to contractor sites**
 - Increased emphasis on small business/small disadvantaged business subcontracting by Recipient team
- **Obtain small business subcontracting plans and reporting on future large cooperative agreements with industry**

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Termination

- **Policy**

- Either Party can Suspend or Terminate the Agreement
- In the event of termination by either party, the termination liability is capped by the next milestone payment
- No special provisions for data or property rights in the event of termination

- **Issues/Lessons Learned**

- **Tailored Cooperative Agreement to Encourage the Recipient to Complete the Effort (discourage them from walking away)**
 - Rights to data without restriction if NASA terminated for cause or Recipient terminates/walks
 - Termination liability limited to paid milestones plus termination liability not to exceed next payment milestone if Recipient terminates or NASA terminates for cause
- **Plan to pursue title to all X-33 Property if Recipient terminates or NASA terminates for cause**
 - Part of negotiation of recovery proposal, ownership tied to completion

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External Reviews

- **Issues/Lessons Learned**
 - **Ongoing External reviews since Award**
 - Full-time IG investigator on program at MSFC
 - Fundamental differences with IG on policy decision to use cooperative agreement versus procurement contract
 - Everything viewed from “business as usual” perspective
 - Time consuming for everyone, especially early in the review
 - **Broad Review of Cooperative Agreements across NASA with commercial firms by IG (including X-33)**
 - provided some positive comments, addressed “best practices”
 - **GAO review complete**
 - **Extensive Independent Review by/for Team Member’s Corporate Offices (due to IRAD contribution)**
- **Future**
 - Continue to pursue new and innovative contracting approaches
 - Plan on steady stream of external reviews